

Figure 1

9p120 422-432
rrv_85283

1264 1274 1284 1294

CAAATTATAAACATGTGGCAGAAAGTAGGAAAA
||| ||| ||| ||| ||| ||| ||| ||| ||| |||
CAAATTAAAACTTTTAAAGAAAGTAGGAAAA

Figure 2

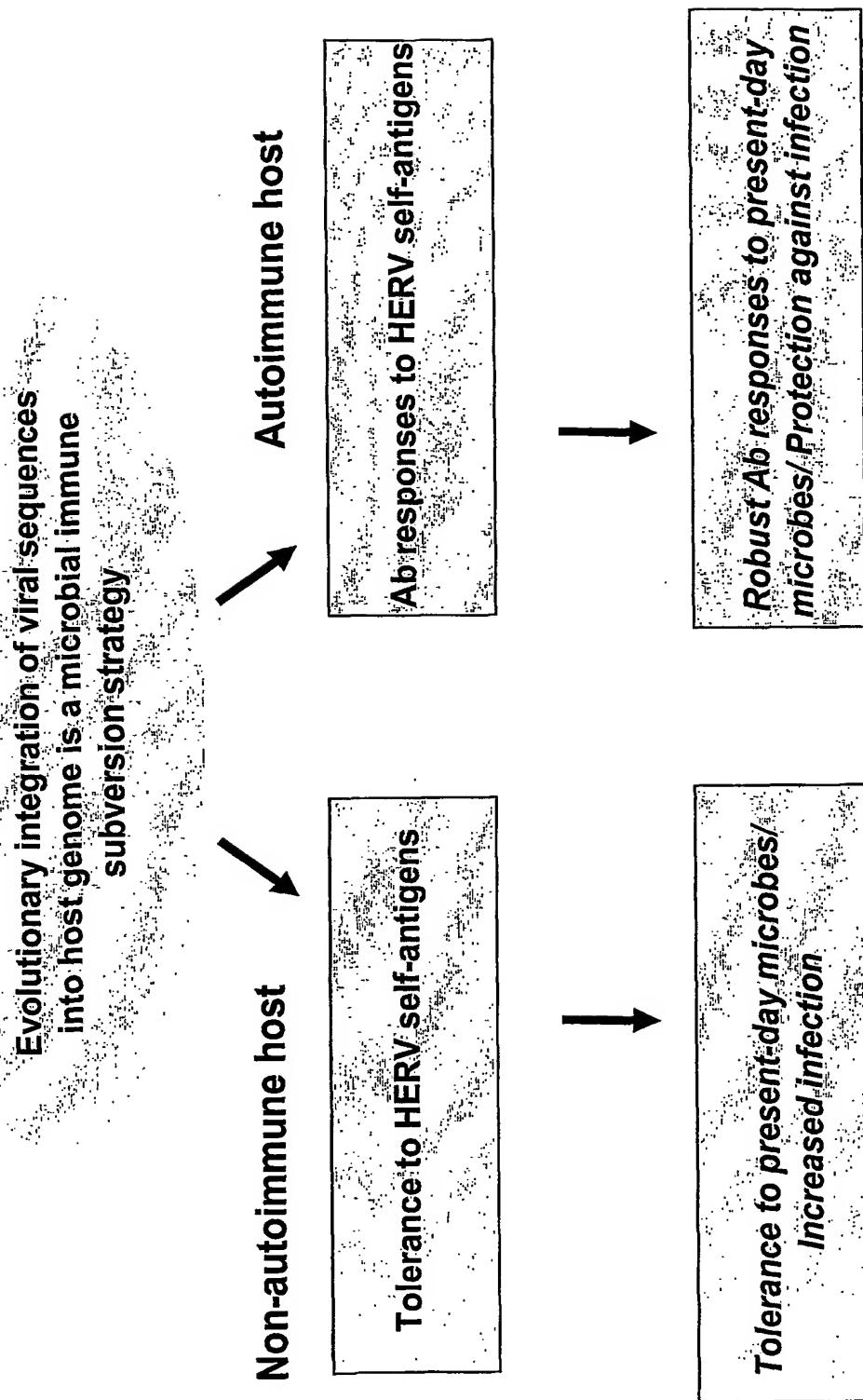


Figure 3

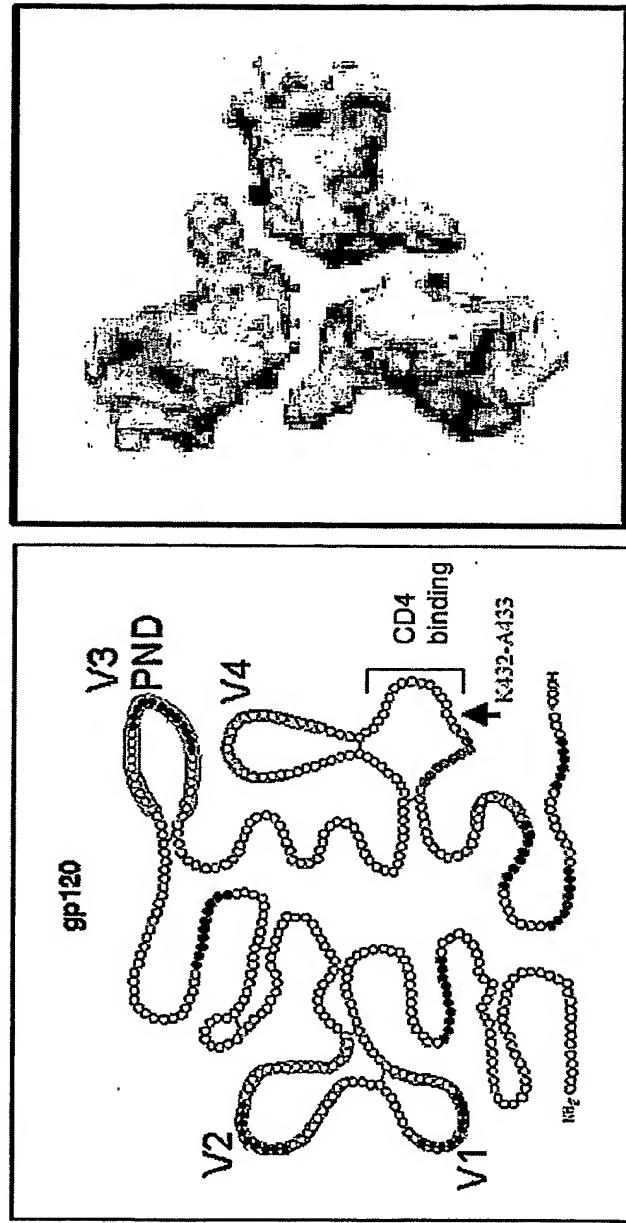


Figure 4

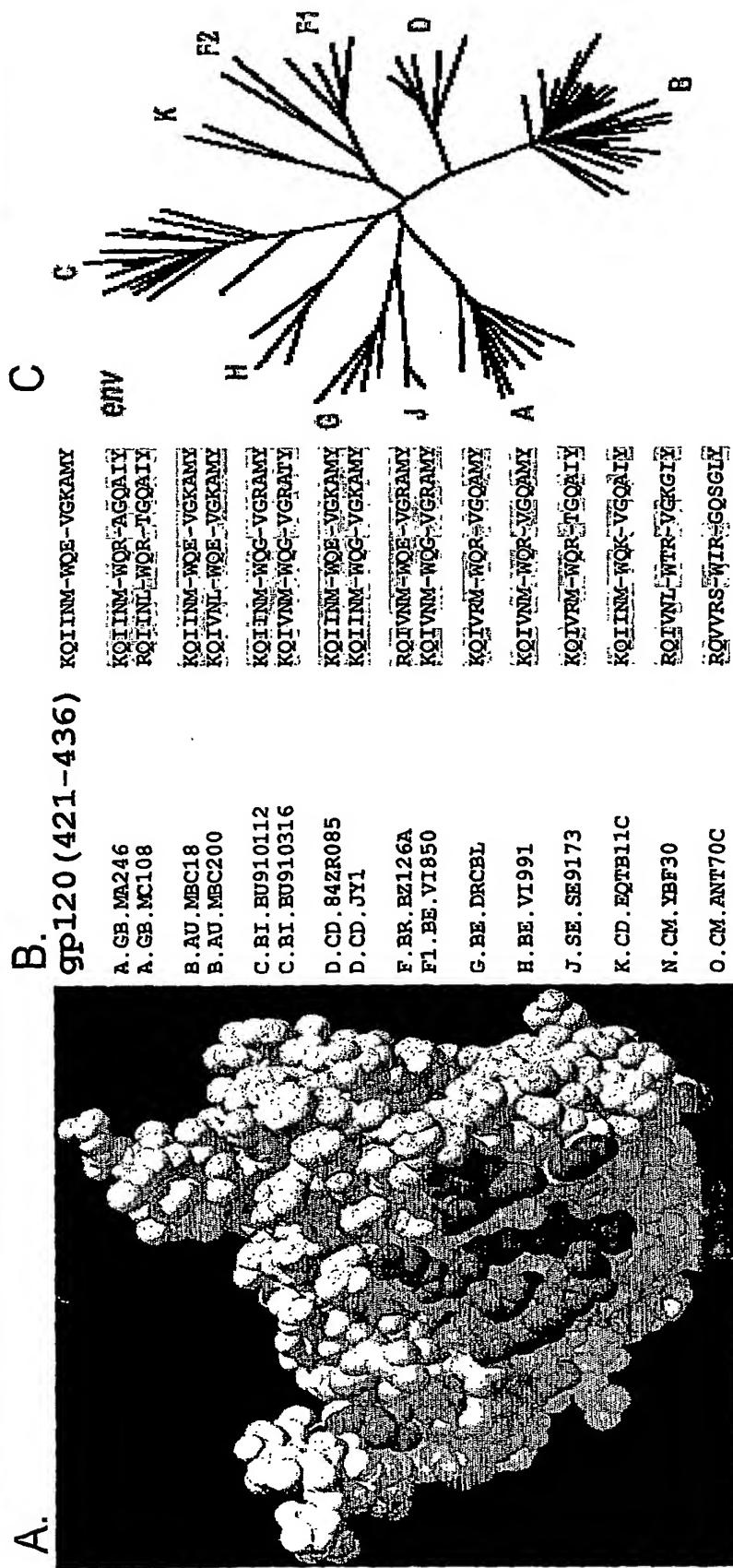
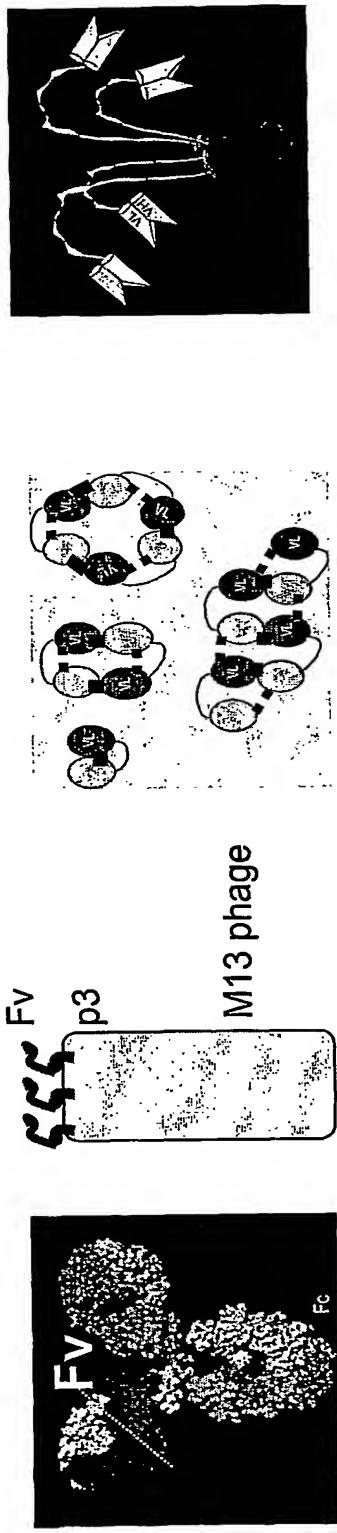


Figure 5

Fv variants with improved gp120 binding properties

- Affinity, avidity, cross-clade HIV neutralization
- Neutralizing potency consistent with immunotherapy use

A. IgG **B. Phage scFv** **C. Soluble scFv** **D. Multivalent Fv**



E. IgM **F. Linker-optimized scFv** **G. Hybrid/affinity matured scFv**

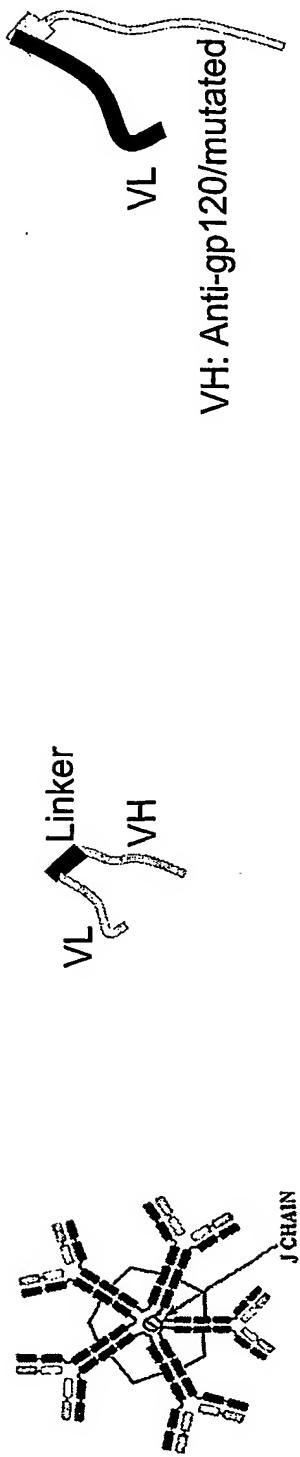


Figure 6

Library	Vector	Source	Full-length Inserts, %	Size	Diversity %	Antibody expression, mg/L
L chain	pCT5his6	PBL, lupus	72	8.8x10 ⁵	54	~2
Fv	pHEN2	PBL, lupus	60	1.4x10 ⁷	100	~3

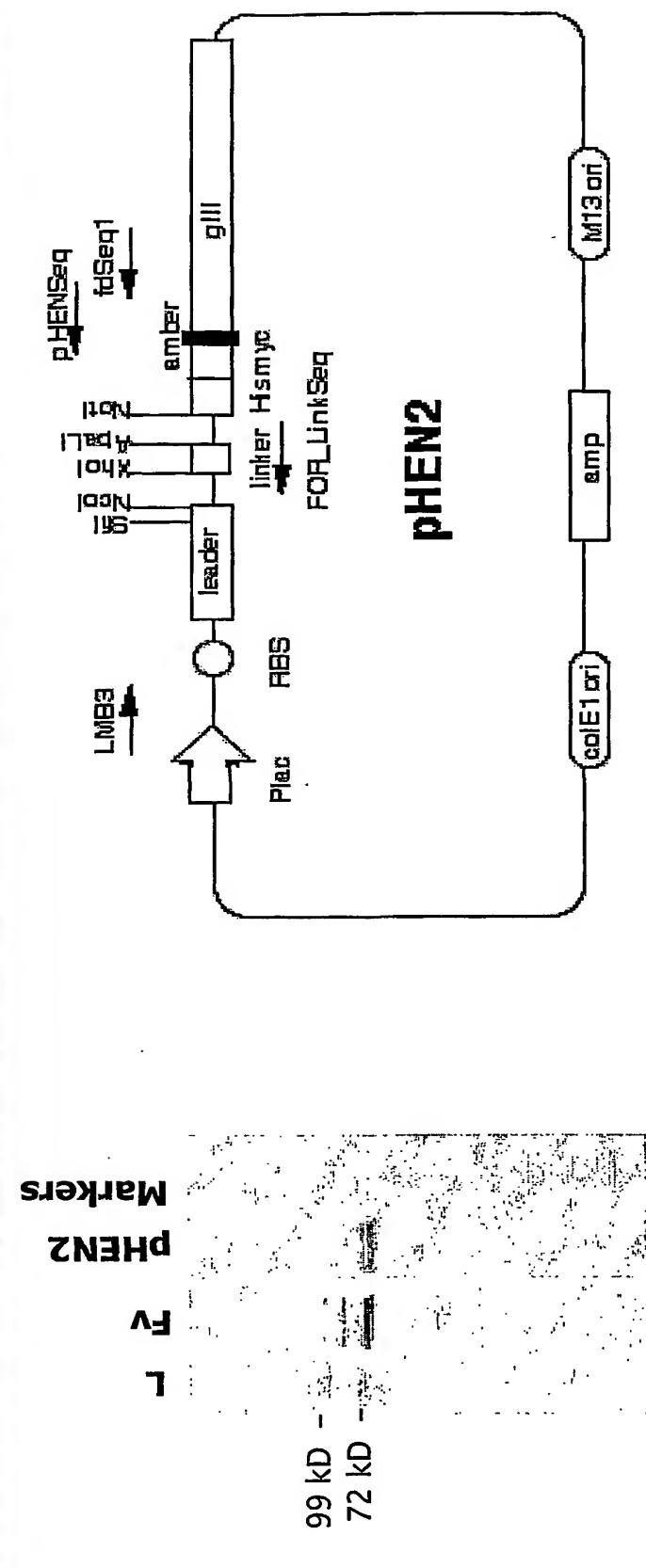
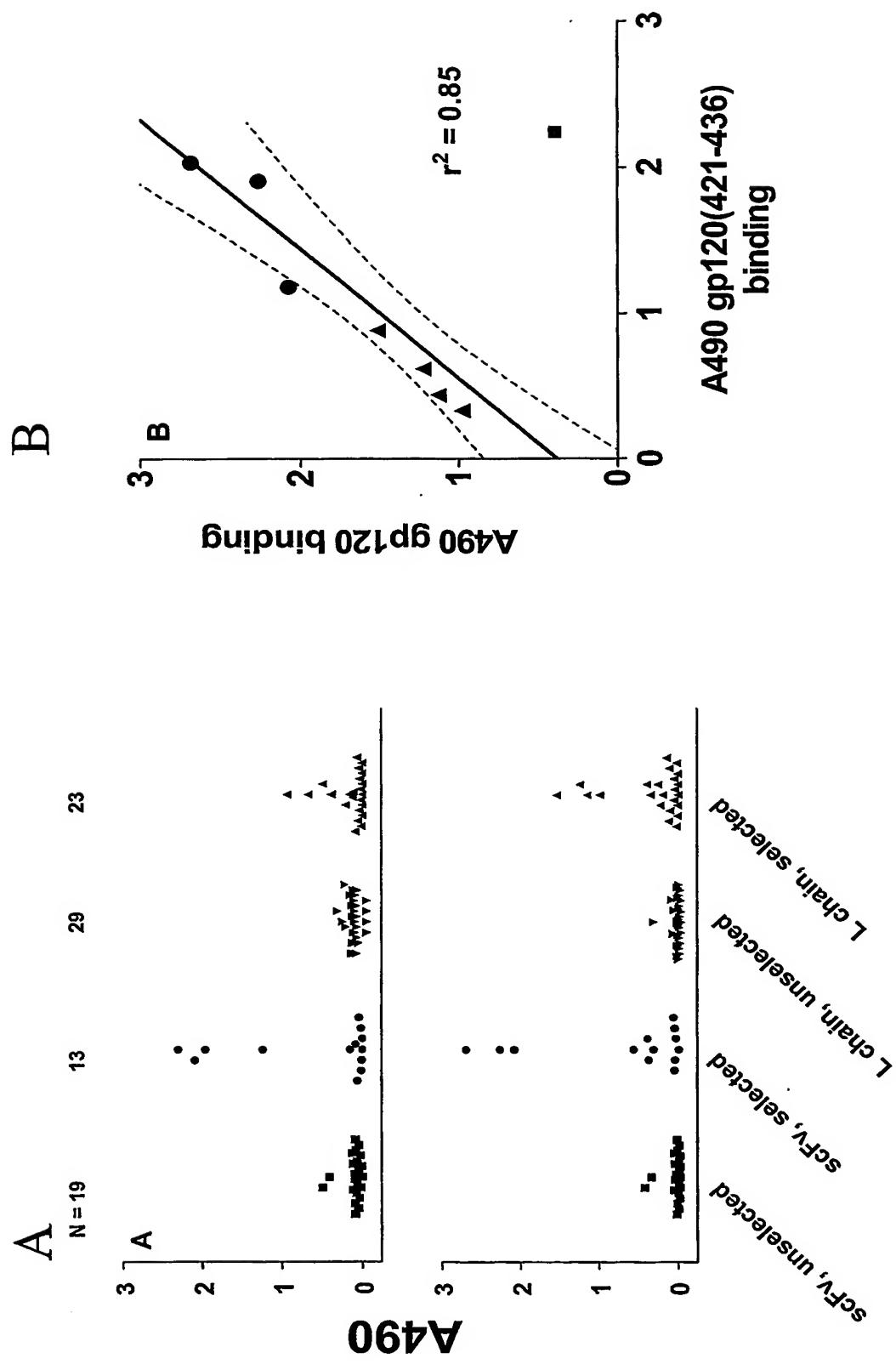


Figure 7



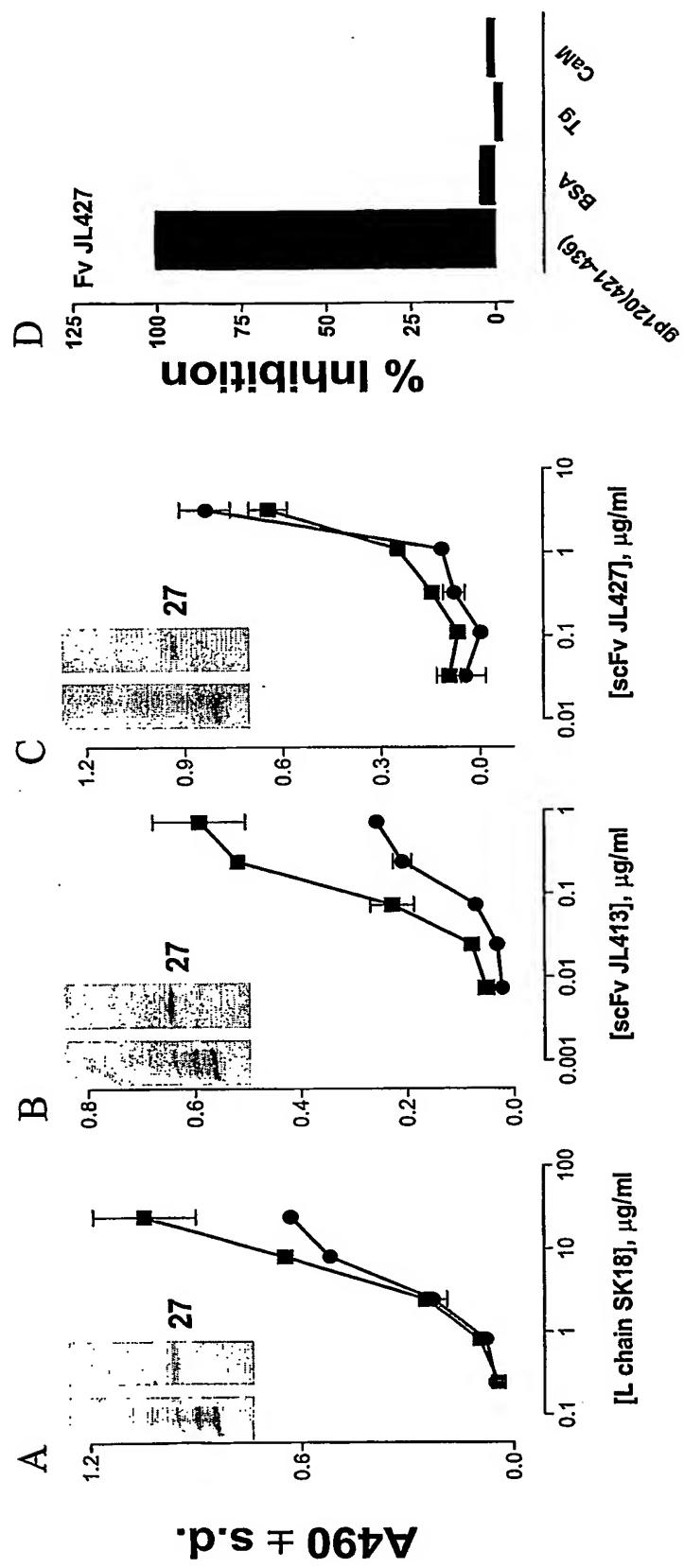


Figure 9

scFv JL413 VL domain

1 ASP VAL VAL MET THR GLN SER PRO SER SER VAL SER ALA SER VAL GLY ASP ARG VAL THR

21 ILE THR CYS ARG ALA SER GIN GLY ILE GLY ASN TRP LEU ALA TRP TYR GLN GLN LYS PRO

41 GLY LYS ALA HIS ASN LEU LEU ILE TYR GLY ALA SER SER LEU GLN SER GLY VAL PRO SER

61 ARG PHE SER GLY SER GLY THR ASP PHE THR LEU THR ILE SER SER LEU GLN PRO

81 GLU ASP SER ALA THR TYR TYR CYS GLN GLN ALA LEU VAL GLY THR PHE GLY GLY GLY THR

101 LYS VAL GLU ILE LYS ARG

scFv JL413 VH domain

1 GLN VAL ASN LEU ARG GLU SER GLY PRO GLY LEU VAL LYS PRO SER GLU THR LEU SER LEU

21 THR CYS THR VAL SER GLY GLY PHE ILE SER SER TYR TYR TRP SER TRP ILE ARG GLN PRO

41 PRO GLY LYS GLY LEU GLU TRP ILE GLY PHE THR TYR SER GLN SER THR TYR TYR ASN

61 PRO SER LEU LYS SER ARG VAL THR ILE SER VAL ASP THR SER LYS ASN GLN PHE SER LEU

81 LYS LEU SER SER VAL THR ALA ALA ASP THR MET TYR CYS TYR CYS TRP GLY GLN GLY

101 THR LEU VAL THR VAL SER SER

Figure 10 A

scFv JL427 VL domain

1 GLN SER VAL LEU THR GLN PRO PRO SER VAL SER GLY ALA PRO GLY GLN ARG VAL THR ILE
 21 SER CYS SER GLY SER SER SER ASN PHE GLY LEU ASN TIR VAL TIR TRP TYR GLN HIS PHE
CDR1

41 PRO GLY THR ALA PRO LYS LEU ILE TYR ARG ASN ASP GLN ARG PRO ILE GLY VAL PRO
 81 ALA ARG PHE SER GLY SER LYS SER GLY THR SER ALA SER LEU ALA ILE SER GLY LEU ARG

101 GLU ASP GLU ALA ASP TYR TYR CYS GLN SER TYR ASP ASN SER ILE SER GLY TRP VAL
 SER GLN VAL GLN LEU GLN SER GLY GLY LEU VAL GLN PRO GLY ARG SER LEU ARG LEU

121 PHE GLY GLY GLY TYR GLN LEU TYR VAL ILE GLY
 PHE GLY GLY GLY TYR GLN LEU TYR VAL ILE GLY

scFv JL427 VH domain

1 GLN VAL GLN LEU GLN SER GLY GLY LEU VAL GLN PRO GLN PRO GLY ARG SER LEU ARG LEU
 60

41 SER CYS ALA ALA SER GLY PHE THR PHE SER SER TYR GLY MET HIS TRP VAL ARG GLN ALA
 SER CYS ALA ALA SER GLY PHE THR PHE SER SER TYR GLY MET HIS TRP VAL ARG GLN ALA

61 PRO GLY LYS GLY LEU GLU TRP VAL SER TYR ILE GLY ARG SER GLY SER HIS THR ASN TYR
 81 ALA ASP SER VAL LYS GLY ARG PHE THR ILE SER ARG ASP ASN SER LYS ASN THR LEU TYR

101 LEU GLN ILE ASN SER LEU ARG ALA GLU ASP THR ALA VAL TYR TYR CYS ALA ARG GLY LEU
 121 PRO ASN TYR GLY MET ASP ILE TRP GLY GLN GLN GLY THR THR VAL THR VAL SER SER

Figure 10 B

Light chain SK18 VL domain

1 ASP ILE GLN MET THR GLN SER PRO SER SER LEU SER ALA SER VAL GLY ASP ARG VAL THR
21 VAL THR CYS ARG_{ALA} SER GLN_{SER} ILE SER SER TYR LEU ASN TRP TYR GLN GLN GLN PRO
41 GLY LYS ALA PRO LYS LEU ILE TYR ALA_{ALA} SER SER LEU GLN_{SER} GLY VAL PRO SER
61 ARG PHE SER GLY SER GLY THR ASP PHE THR LEU THR ILE SER SER LEU GLN PRO 80
81 GLU ASP PHE ALA THR TYR PHE CYS GLN_{GLN} SER TYR_{SER} ILE PRO ARG THR PHE GLY GLN
101 GLY THR LYS VAL GLU ILE LYS

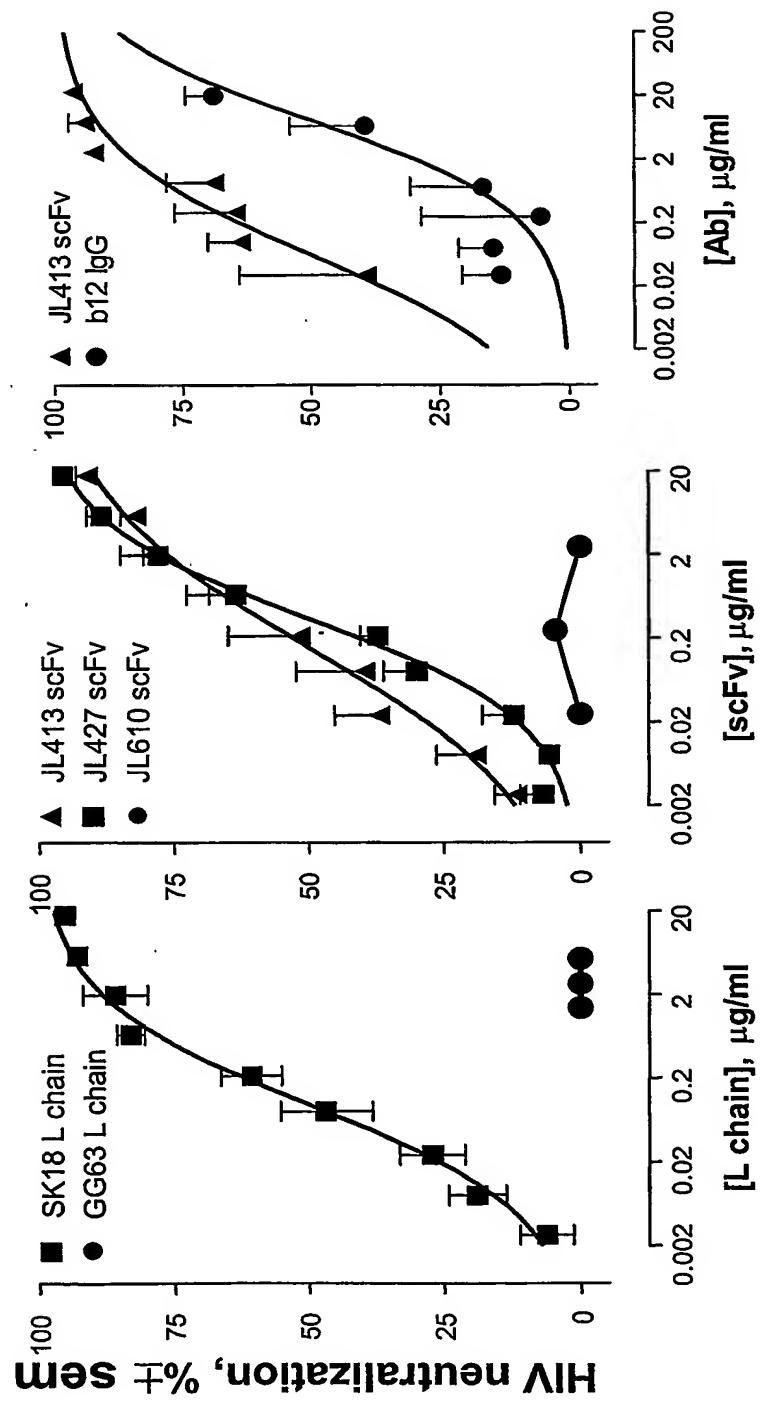


Figure 11

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